“Our continued investment in the optimization of EarthStudy 360® seismic imaging software enables our customers to take immediate advantage of the latest generation of Intel® Xeon® processors and other Intel® platform technologies.”

Duane Dopkin, Executive Vice President of Geoscience, Paradigm

With Paradigm® EarthStudy 360® and the Intel® Xeon® processor E5 v4 family, you can:

- Gain a full 360 degrees of insight into the subsurface.
- Complete a study with up to 44 percent higher performance than previous-generation processors.¹
- Scale performance smoothly in the future as processor core counts continue to increase.

Declining production in mature oil and gas fields is forcing energy companies to better understand the reasons for the decline and to shift their exploration focus to areas of increasing geologic complexity in pursuit of new reservoirs. Paradigm® EarthStudy 360® running on the Intel® Xeon® processor E5 2600 v4 product family offers a valuable new resource in this challenging environment, providing previously unattainable levels of subsurface knowledge to help geoscientists optimize development and reduce risk.

Part of the comprehensive Paradigm® GeoDepth® system for analysis and imaging of the subsurface, EarthStudy 360 is a new seismic imaging system that uses all the recorded seismic data to deliver improved insight. The recorded data is decomposed into full-azimuth, angle-dependent reflectivities and directional (dip and azimuth) components. These components are then combined to produce highly detailed and accurate seismic images and subsurface velocity models.
Up to 44 Percent Faster Time to Results¹

The Intel Xeon processor E5 2600 v4 product family is ideal for the intense computational demands of seismic imaging. These processors provide up to 22 cores, 44 threads, and 55 MB of last level cache. They also include Intel® Advanced Vector Extensions 2.0 (Intel® AVX2), which doubles the number of floating point operations (flops) per clock cycle versus first-generation Intel AVX.

Based on a recent benchmark study, this new processor family boosts performance for EarthStudy 360 by up to 44 percent versus previous-generation processors.¹ With these gains, tomography studies can typically be completed faster, enabling improved turnaround on velocity refinement. Results also show near-linear scaling with increasing core counts, so ongoing performance gains can be expected as Intel integrates more cores into future Intel Xeon processor generations.

Excellent Scalability with Optimized Software

Paradigm software is optimized for each new Intel Xeon processor generation. Paradigm developers use Intel® Compilers for improved vectorization and the Intel® Math Kernel Library to accelerate some of the most performance-critical algorithms, such as Fast Fourier Transforms.

These optimizations help to improve cache and memory utilization and provide efficient parallel throughput across large numbers of cores, threads, and server nodes. They also deliver optimized performance on both multi-core Intel Xeon processors and many-core Intel® Xeon Phi™ coprocessors, providing simple, cost-effective options for future scaling. Paradigm and Intel are also exploring the use of Intel® Solid-State Drives and Intel® Omni-Path Architecture, so customers can scale their storage and fabric solutions more easily and achieve higher total performance within a given cluster hardware budget.

Drill with Greater Confidence

With EarthStudy 360 and the Intel Xeon processor E5-2600 v4 product family, you can achieve deeper subsurface insights to optimize development, reduce risk, and achieve better overall outcomes.

Learn More

• Paradigm® GeoDepth® http://pdgm.com/products/geodepth/

¹ Performance on the Paradigm® GeoDepth® - Migration time benchmark (lower scores are better) for three different single-node servers configured with: (1) 2 x Intel® Xeon® processor E5-2697 v3, score 3305, (2) 2 x Intel® Xeon® processor E5-2699 v4, score 2634, and (3) 2 x Intel® Xeon® processor ES-2699 v4, score 2301. All servers were configured with 128 GB total memory and Red Hat Enterprise Linux® 6.4 kernel 2.6.32-358. Tests were performed by Intel as of March 1, 2016.

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products.

For more complete information visit http://www.intel.com/ performance.

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